RANUNCULUS FICARIA (RANUNCULACEAE), NATURALIZED IN TEXAS

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ABSTRACT

Ranunculus ficaria is naturalized along a creek in Tarrant Co, Texas. The plants produce axillary bulbils and infertile achenes and perhaps are best identified as subsp. *bulbifera*, although other morphological features do not closely accord with previous descriptions of that subspecies.

KEY WORDS: *Ranunculus ficaria*, naturalized, Texas

RESUMEN

Ranunculus ficaria está naturalizado a lo largo de un arroyo en Tarrant Co, Texas. Las plantas producen bulbillos axilares y aquenios infertiles y quizás estén mejor identificados como subsp. *bulbifera*, aunque otras características morfológicas no estén muy de acuerdo con las descripciones previas de esa subespecie.

A population of *Ranunculus ficaria* L. (lesser celandine, fig buttercup) was discovered in flower immediately adjacent to Overton Creek in Fort Worth's Overton Park, near the center of the city. The creek at this point runs through a broad but relatively steep-sided ravine and is about three miles above confluence with the Trinity River. Tributaries of Overton Creek pass through several miles of urban neighborhood upstream from this area. The creek commonly rises beyond its banks in heavy rain.

Thirty discrete plants, clearly naturalized, grow in an area of about 30 square feet—the largest produced at least 20 flowers. A second population of five scattered plants occurs on the stream terrace about 300 yards downstream.

Voucher Specimen: **TEXAS. Tarrant Co.:** Fort Worth, Overton Park between the TCU campus and Hulen Street, Overton Creek parallel to Shady Creek Drive, immediately adjacent to the creek on the wet, sandy terrace, first seen in flower 2 Mar, collected 8 Mar 2008, axillary bulbils abundantly in production by 2 Apr, *Nesom FW08-1* (BRIT, MO, NCSC, NCU, TEX).

The Overton Creek plants arise from tuber-producing fibrous roots and produce dark green, glabrous, ovate and deeply cordate but otherwise entire (to faintly crenate) basal leaves and solitary, yellow flowers on erect to ascending leafless peduncles. The habitat is typical for the species—where naturalized elsewhere in North America, the plants occur on shaded stream banks, floodplains, low woods, and moist disturbed areas. "Flowering usually occurs from late winter through mid-spring (March through May), depending on conditions. Afterwards, the above-ground portions die back" (Swearingen 2005). *Ranunculus ficaria* is a beautiful horticultural species, and many photos are available on the internet.

Sell (1994) distinguished five subspecies based primarily on leaf and flower size, achene fertility, and whether or not axillary bulbils are produced after flowering. Among the five subspecies, only subsp. *bulbifera* (Marsden-Jones) Lawalree (as "subsp. *bulbilifer* Lambinon") and subsp. *ficariiformis* (F.W. Schultz) Rouy & Fouc. were described by Sell as producing bulbils, and of these two, only subsp. *bulbifera has infertile, glabrous achenes*. The Overton Creek plants produce axillary bulbils and infertile achenes and probably are best identified as subsp. *bulbifera*, but otherwise they are not a clear morphological match for any of the subspecific taxa in Sell's key. The leaves are numerous and densely crowded at the base on short stems. Most leaves are ca. 6–7 cm long and 5–5.5 cm wide, ranging smaller to 3 × 3 cm, on petioles 8–10 cm long. The flowers are ca. 2.5–4 cm in diameter with 7–9 petals 15–19 mm long, 6–8 mm wide. Pollen (2 plants) is ca 70% viable, as judged by uniform size and full-staining in lactophenol-cotton blue; the remaining 30%

of the grains are non-staining and distinctly smaller (and highly variable in size). All achenes apparently are glabrous and infertile. Axillary bulbils were not present at the time of collection (8 March) but were in abundant production by 2 April—they are whitish, conic-cylindric to short-cylindric, and essentially without surface features. Superficially, at least, the axillary bulbils are very similar to the root tubers. Many stems and leaves had at least begun to wither by 5 May, with the axillary bulbils loosened and easily detached.

Confidence in identification of infraspecific taxa is further tempered by Whittemore's observations (1997): "The species is extremely variable (especially in leaf size and stem posture), and many attempts have been made to divide it into varieties or subspecies (see Sell 1994). The different forms, however, intergrade extensively and the varieties are often impossible to distinguish." Sell himself noted (p. 47) that "a large proportion of herbarium specimens cannot be determined with certainty" and relied on field experience in the British Isles and on published literature to summarize distributions of the infraspecific taxa.

Sell (1994) noted that "all the subspecies can spread by tubers ('Clones of all the subspecies can be produced by division of the root tubers.'), two spread by axillary bulbils, and all except subsp. [*bulbifera*] can spread by seed." Both the tubers and bulbils are easily carried downstream during flood events (Bargeron et al. 2003). Bulbils are produced near the end of flowering or in fruit maturation, and Sell noted that the five taxa can be recognized "if cultivated, or if examined at intervals through their flowering and fruiting periods." Detailed observations of this nature, however, apparently have not been recorded in North America—Magee and Ahles (1999) and Rhoads and Block (2007) unequivocally specify that the plants produce bulbils, but other U.S.A. floras note that bulbils are produced "sometimes" or "often." Only Magee and Ahles have identified the plants to infraspecific rank (as subsp. *bulbifera*).

Ranunculus ficaria is native to Europe, northern Africa, and western Asia. In North America it is naturalized in Oregon, Washington, and British Columbia and from Missouri, Tennessee, and Virginia northward to Ontario, Quebec, and Newfoundland (PLANTS Database 2008). The Texas plants are the southernmost known for the species as naturalized in the U.S.A. It is reported to be invasive in Connecticut, Delaware, Maryland, New Jersey, Oregon, Pennsylvania, Virginia, Wisconsin, West Virginia, and the District of Columbia (Plant Conservation Alliance 2007).

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